

6/20/94

RE: HISTORICAL OVERVIEW OF DEFINITIONS OF ADDICTION/DEPENDENCE AS SET FORTH BY WHO EXPERT COMMITTEES, SGR, ICD AND DSM, INCLUDING TRENDS IN USAGE

Tobacco use has long been generally recognized by the public as being a hard habit to break, and even an addiction. For at least a century, smokers have often been referred to as "addicted"¹ and smoking as an "uncontrollable habit."² Smokers were called "cigarette fiends"³ and said to become a "slave to the habit."⁴ The widespread awareness that smoking can be a habit that is hard to break continues to the present. Labelling smoking as addictive emphasizes that characteristic, but many of the early references to smoking as an addiction probably did not rely on a clear distinction between the concept of addiction and the concept of habit. At least by the 1950s, such a distinction was evolving and was reflected in efforts by the World Health Organization (see following section) to restrict "addiction" to physiologically-driven behavior and to use the term "habit" (or habituation) to refer to more psychologically-based behaviors.

WHO Expert Committees

In 1957, an expert committee of the World Health Organization (WHO) issued a report which formalized a distinction between "addiction" and "habituation."⁵ Addiction was considered to be a state of intoxication characterized by compulsion, tolerance, psychological and usually physical dependence and both personal and societal detrimental effects. Habituation was considered to be a "condition" characterized by a "desire" for a drug, little or no tolerance, psychological dependence only (i.e., no physical dependence or withdrawal syndrome) and whatever harm the drug might cause is restricted to the individual.

The 1957 distinction between addiction and habituation has been influential in the scientific community and in efforts to classify smoking. Several authors used this distinction to analyze cigarette smoking and concluded that smoking best fit the definition of habituation.^{6 7} The most notable publication that applied this distinction was the 1964 Report of the Advisory Committee to the Surgeon General.⁸

In 1964, a subsequent WHO expert committee report was published, which criticized the 1957 distinction between habituation and addiction, and recommended that these terms not be used.⁹ Instead, the expert committee suggested the term "dependence." "Dependence" was intended to be broad and to carry a very general meaning so it could apply to any kind of substance or drug use. In fact, essentially no specific criteria were given, other than repeated drug administration, since the characteristics of dependence were

said to vary with the type of drug involved. Physiological criteria (e.g., intoxication, tolerance, withdrawal) were not specified in the definition of "dependence."

Surgeon General Reports (1964 vs. 1988)

The 1964 Surgeon General's Report¹⁰ concluded that tobacco smoking was a type of habit (habituation). However, the 1988 Surgeon General's Report¹¹ concluded that smoking was an addiction. Arguably, this change in position was facilitated by designing the 1988 Report's addiction definition and criteria so as to exclude the 1964 Report's addiction criteria of intoxication, physical dependence and tolerance.

The 1964 Surgeon General's Report set forth criteria for addiction that distinguished addiction (largely a physiological condition) from habituation (largely a psychological condition).¹² As mentioned previously, the 1964 Report's criteria for addiction and for habituation are the same as those set forth in 1957 by a WHO expert committee. The 1957 WHO report specified intoxication, tolerance and physical dependence as criteria for addiction.

By contrast, the 1988 Report's definition of addiction or dependence (used interchangeably in the report) was broad. The definition was based on behavioral and philosophical concepts of self-administration, "influences" on behavior and judgments about whether a person was "free" to use a substance.¹³ Moreover, the criteria for dependence given in the 1988 Surgeon General's Report did not include intoxication, physical dependence or tolerance as "primary" criteria.¹⁴

In sum, by eliminating important, physically-based criteria from the definition of addiction or dependence, it was possible for the Surgeon General's Report of 1988 to reverse the position taken in 1964.

Proponents of the smoking addiction hypothesis might argue that much more was known in 1988 than in 1964 about nicotine and its role in smoking and that this accumulation of scientific knowledge is the major basis for the change in position from the 1964 to the 1988 Report. This argument, however, does not recognize that, even in the 1964 Report, the basic pharmacology of nicotine, including reports of central nervous system effects, were already widely discussed in the literature. Nicotine pharmacology is reviewed at length in the 1964 Surgeon General's Report. For example, a central point in the 1964 Report's discussion is that nicotine appears to have both stimulating and tranquilizing effects. These different effects depend on dose, physiological response being measured, individual variation and numerous other factors. These dual actions of nicotine were discussed both in terms of the underlying pharmacology of nicotine and in terms of a more general psychological response in smokers.¹⁵

ICD

The manual for worldwide use for medical classification, including diagnosis of mental disorders, is the International Classification of Diseases (ICD). A well-known use of the ICD is for classification of causes of death on death certificates.

The ICD is published by the World Health Organization. The ninth revision of this manual (ICD-9) was published in 1977.¹⁶ It provides a definition of drug dependence which emphasizes psychological aspects of drug use (behavioral responses, psychic effects, compulsion). Although the definition notes that physical factors may be involved in drug dependence, such factors are not required to meet the definition.¹⁷

Although tobacco use is included in ICD-9, it is treated inconsistently. Tobacco use is not categorized as a type of drug dependence.¹⁸ Instead, tobacco (tobacco dependence) is listed in ICD-9 within the category of "nondependent abuse of drugs,"¹⁹ under the rationale that "tobacco differs from other drugs of dependence in its psychotoxic effects."²⁰

The tenth revision of the ICD was published by the WHO in 1992.²¹ As in ICD-9, ICD-10 provides a definition of dependence which is largely behaviorally oriented.²² Insofar as tobacco use is concerned, the most important change from ICD-9 to ICD-10 is that the inconsistent listing of tobacco in ICD-9 is no longer characteristic of ICD-10. The inconsistency in ICD-9 is that the term "tobacco dependence" occurs, but is categorized as a type of "nondependent abuse," rather than as a type of "drug dependence." ICD-10 lists 10 categories of "Mental and behavioural disorders due to psychoactive substance use."²³ "Dependence syndrome" and "withdrawal state" are specific diagnoses applicable to each of these 10 general categories. Tobacco is one of the 10 categories of "psychoactive" substances. Tobacco use is classified consistently and similar to the other substances.

DSM

In the United States, the standard source for psychiatric diagnosis is published by the American Psychiatric Association (APA) and is known as the Diagnostic and Statistical Manual (DSM). A critical use of this classification system is to provide diagnoses on compensation forms for medical insurance purposes.

The first two editions of the DSM did not include tobacco use. For example, the second edition (DSM-II),²⁴ published in 1968, specifically excluded tobacco from the category of "drug dependence." Caffeine-containing beverages were also excluded as a drug dependence. "Alcoholism," including "alcohol addiction," was covered in a separate section of DSM-II. DSM-II appeared to use the terms addiction and dependence interchangeably and did not

provide a formal definition of either. The primary factor in making a diagnosis of dependence was that the individual have "evidence of habitual use or a clear sense of need for the drug." Withdrawal symptoms were not a requirement for the diagnosis.²⁵

The third edition of the APA's manual (DSM-III), published in 1980,²⁶ is often cited for its inclusion of the terms "tobacco dependence" and "tobacco withdrawal." DSM-III marks the first time smoking behavior appeared in the APA's diagnostic manual. The criteria for "tobacco dependence" do not require physiological factors to be involved. All that is required are either for a smoker to have unsuccessfully tried to quit, or to have experienced the symptoms of "tobacco withdrawal" (which are generally vague and psychological, see below) or to have continued to smoke despite a physical disorder.²⁷

The DSM-III criteria for "tobacco withdrawal" are similarly psychologically-based and are arguably characteristic of quitting many well-ingrained behaviors or well-liked habits. After quitting, to be diagnosed with "tobacco withdrawal," a smoker must experience at least four of the following: craving; irritability; anxiety; difficulty concentrating; restlessness; headache; drowsiness; gastrointestinal disturbances.²⁸

The inclusion of tobacco in DSM-III may have been influenced by a variety of considerations not relating to science. In this regard, a United States psychologist, Dr. William T. McReynolds, argued that introducing new psychiatric diagnoses into DSM-III involved processes that are "social and political, not scientific, in nature."²⁹ Also, the potential influence of financial considerations may have been present because insurance reimbursement for the "treatment" of smokers would not be possible without tobacco's inclusion in DSM-III.

DSM-III's criteria for "tobacco dependence" are arguably largely meaningless because they can be used to classify almost any smoker as "tobacco dependent." In one survey of the United States general population, 90 percent of the smokers were reported to fulfill the DSM-III criteria for "tobacco dependence." This research, reported by Dr. John Hughes, a researcher at the University of Vermont, was supported by the U.S. National Institute on Drug Abuse. Dr. Hughes and his colleagues stated that their results suggest that the DSM-III criteria for "tobacco dependence" are "overinclusive."³⁰

Perhaps in an attempt to resolve some of the weaknesses in DSM-III, a revised manual known as DSM-III-R was published in 1987.³¹ In DSM-III-R, the terms "tobacco dependence" and "tobacco withdrawal" were changed to "nicotine dependence" and "nicotine withdrawal." DSM-III-R also revised some of the diagnostic criteria related to smoking, but these new criteria, as in DSM-III, generally pertain to behavioral or psychological factors, rather

than to objective physiological consequences of drug use. For example, DSM-III-R lists criteria for "dependence" that are psychological, such as "desire" to quit, or "time spent" in the activity. Although four of the nine criteria allude to physiological factors, the remaining five are psychological or behavioral. Since only three are required for the diagnosis of nicotine dependence, the physiological criteria may be irrelevant to diagnosing an individual smoker.³² Furthermore, with regard to one of the physiological criteria, DSM-III-R specifically excludes tobacco by noting that with smoking there is an "absence of a clinically significant nicotine intoxication syndrome."³³

The APA's inclusion of smoking-related "withdrawal" diagnoses in its manuals does not establish that physical dependence occurs in smokers. In fact, both DSM-III and DSM-III-R clearly state that many of the critical scientific questions related to possible nicotine "withdrawal" remain unanswered. Both versions concede that it is not known whether a reaction observed in an exsmoker is really withdrawal or merely some psychological response. DSM-III-R comments, for example, that any so-called "withdrawal" could simply reflect frustration due to giving up a pleasurable habit, or the "loss of a reinforcer."³⁴

The dubious significance of the diagnosis of "nicotine withdrawal" is particularly apparent in DSM-III-R's own admission that no one knows whether this diagnosis has anything to do with quitting smoking. DSM-III-R states: "Whether severe Nicotine Withdrawal decreases the ability to stop smoking or remain abstinent from smoking is unknown."³⁵

In short, the tobacco-related terminology introduced by the APA's diagnostic manuals is overbroad and unhelpful in providing an explanation for smoking behavior. The diagnostic criteria given in DSM-III and DSM-III-R do not distinguish whether smoking is an addiction or whether it is a habit.

Current Usage

It is the industry's position that in order for the scientific usefulness of the term "addiction" to be maintained, the definition must specify physiological criteria. As noted previously in this review, these criteria--intoxication, physical dependence (withdrawal) and tolerance--were a historical focus of the WHO position in the late 1950s and of the first Surgeon General's Report in 1964.

There has been a trend since 1964 for the terms "addiction" and "dependence" (both of which generally tend to be used interchangeably in the literature) to be used increasingly loosely. In current usage by the lay press and even in much scientific literature, there is a tendency to use these terms to describe almost any frequently occurring behavior, especially when

END NOTES

1. The New York Times, April 5, 1880.
2. "Smokers and the Smoked: Has the Cigar Caused a Decline in Fine Manners," The New York Times, August 16, 1880.
3. "How Smoking Affected Boys in One School," The New York Times, August 23, 1902.
4. "Smoking on Public Buses," The New York Times, May 28, 1914.
5. World Health Organization Expert Committee on Addiction-Producing Drugs, "World Health Organization Technical Report Series No. 116," Seventh Report, Geneva, World Health Organization, 1957.

The definitions given by the 1957 WHO report are as follows:

Drug addiction

Drug addiction is a state of periodic or chronic intoxication produced by the repeated consumption of a drug (natural or synthetic). Its characteristics include:

- (1) an overpowering desire or need (compulsion) to continue taking the drug and to obtain it by any means;
- (2) a tendency to increase the dose;
- (3) a psychic (psychological) and generally a physical dependence on the effects of the drug;
- (4) detrimental effect on the individual and on society.

Drug habituation

Drug habituation (habit) is a condition resulting from the repeated consumption of a drug. Its characteristics include:

- (1) a desire (but not a compulsion) to continue taking the drug for the sense of improved well-being which it engenders;
- (2) little or no tendency to increase the dose;
- (3) some degree of psychic dependence on the effect of the drug, but absence of physical dependence and hence of an abstinence syndrome;
- (4) detrimental effects, if any, primarily on the individual.

Id. at 9-10.

6. Bernstein, D.A., "The Modification of Smoking Behavior: An Evaluative Review." In: Learning Mechanisms in Smoking. W.A. Hunt (ed.). Chicago, Aldine Publishing Co., 3-41, 1970.

END NOTES

1. The New York Times, April 5, 1880.
2. "Smokers and the Smoked: Has the Cigar Caused a Decline in Fine Manners," The New York Times, August 16, 1880.
3. "How Smoking Affected Boys in One School," The New York Times, August 23, 1902.
4. "Smoking on Public Buses," The New York Times, May 28, 1914.
5. World Health Organization Expert Committee on Addiction-Producing Drugs, "World Health Organization Technical Report Series No. 116," Seventh Report, Geneva, World Health Organization, 1957.

The definitions given by the 1957 WHO report are as follows:

Drug addiction

Drug addiction is a state of periodic or chronic intoxication produced by the repeated consumption of a drug (natural or synthetic). Its characteristics include:

(1) an overpowering desire or need (compulsion) to continue taking the drug and to obtain it by any means;

(2) a tendency to increase the dose;

(3) a psychic (psychological) and generally a physical dependence on the effects of the drug;

(4) detrimental effect on the individual and on society.

Drug habituation

Drug habituation (habit) is a condition resulting from the repeated consumption of a drug. Its characteristics include:

(1) a desire (but not a compulsion) to continue taking the drug for the sense of improved well-being which it engenders;

(2) little or no tendency to increase the dose;

(3) some degree of psychic dependence on the effect of the drug, but absence of physical dependence and hence of an abstinence syndrome;

(4) detrimental effects, if any, primarily on the individual.

Id. at 9-10.

6. Bernstein, D.A., "The Modification of Smoking Behavior: An Evaluative Review." In: Learning Mechanisms in Smoking. W.A. Hunt (ed.). Chicago, Aldine Publishing Co., 3-41, 1970.

In introducing his 1970 literature review, Dr. Douglas A. Bernstein (University of Illinois) examined smoking behavior specifically in relation to the 1957 WHO criteria. He stated:

In summary, it must be concluded that cigarette smoking satisfies the World Health Organization's definition of habituation far better than it does that of addiction. Further, the use of the term addiction, even when defined less rigorously, in the description of smoking behavior should be discouraged, in the hope that much of the confusion and misunderstanding surrounding the issue can then be eliminated. Id. at 9.

7. Seevers, M.H., "Medical Perspectives on Habituation and Addiction," Journal of the American Medical Association 181(2): 92-98, 1962.

Dr. Maurice H. Seevers, a pharmacologist at the University of Michigan, and also a member of the Advisory Committee which prepared the first report to the Surgeon General on Smoking and Health, discussed the addiction-habitation distinction, including the 1957 WHO criteria. With regard to nicotine and caffeine, he concluded:

[B]y no stretch of the imagination can either of these conform to any accepted definition of addiction." Id. at 97.

8. U.S. Department of Health, Education, and Welfare, Smoking and Health: Report of the Advisory Committee to the Surgeon General of the Public Health Service. Publication No. PHS 1103, Washington, D.C., U.S. Government Printing Office, 1964.

The 1964 Report of the Advisory Committee to the Surgeon General concluded as follows:

In medical and scientific terminology the practice should be labeled habituation to distinguish it clearly from addiction, since the biological effects of tobacco, like coffee and other caffeine-containing beverages, betel morsel chewing and the like, are not comparable to those produced by morphine, alcohol, barbiturates, and many other potent addicting drugs. Id. at 350.

9. World Health Organization Expert Committee on Addiction-Producing Drugs, "World Health Organization Technical Report

Series No. 273," Thirteenth Report, Geneva, World Health Organization, 1964.

The 1964 definition and recommendations of the WHO Expert Committee on Addiction-Producing Drugs are as follows:

'Drug dependence' is defined as a state arising from repeated administration of a drug on a periodic or continuous basis. Its characteristics will vary with the agent involved and this must be made clear by designating the particular type of drug dependence in each specific case -- for example, drug dependence of morphine type, of cocaine type, of cannabis type, of barbiturate type, of amphetamine type, etc. . . .

The Expert Committee recommends substitution of the term 'drug dependence' for the terms 'drug addiction' and 'drug habituation.'

It must be emphasized that drug dependence is a general term selected for its applicability to all types of drug abuse and carries no connotation of the degree of risk to public health or need for a particular type of drug control. Id. at 9.

10. U.S. Department of Health, Education and Welfare, Smoking and Health: Report of the Advisory Committee to the Surgeon General of the Public Health Service. Publication No. PHS 1103, Washington, D.C., U.S. Government Printing Office, 1964.
11. U.S. Department of Health and Human Services, The Health Consequences of Smoking: Nicotine Addiction, A Report of the Surgeon General, Publication No. DHHS (CDC) 88-8406. Washington, D.C., U.S. Government Printing Office, 1988.
12. 1964 Surgeon General's Report, at 351.
13. The definition of addiction/dependence given in the 1988 Surgeon General's Report is as follows:

. . . the term 'drug dependence' or 'drug addiction' refers to self-administration of a psychoactive drug in a manner that demonstrates that the drug controls or strongly influences behavior. In others words, the individual is no longer entirely free to use or not use the substance. Id. at 248.

14. The criteria for dependence given in the 1988 Surgeon General's Report are as follows:

CRITERIA FOR DRUG DEPENDENCE

Primary Criteria

- . Highly controlled or compulsive use
- . Psychoactive effects
- . Drug-reinforced behavior

Additional Criteria

- . Addictive behavior often involves:
 - stereotypic patterns of use
 - use despite harmful effects
 - relapse following abstinence
 - recurrent drug cravings
- . Dependence-producing drugs often produce:
 - tolerance
 - physical dependence
 - pleasant (euphoriant) effects

Id. at 7.

15. The potential role of nicotine in smoking is discussed primarily in two chapters of the 1964 Surgeon General's Report. Chapter 7, "Pharmacology and Toxicology of Nicotine," discusses basic pharmacology, including central nervous system effects of nicotine. Chapter 13, "Characterization of the Tobacco Habit," discusses broader psychological aspects of nicotine. Chapter 13 also discusses definitional issues and "beneficial" effects of smoking. Both Chapter 7 and Chapter 13 emphasize the dual role of nicotine, which reportedly can act as both a stimulant and a depressant.

With regard to the purported dual role of nicotine, representative excerpts from the 1964 Surgeon General's Report are set forth below:

The most notable action of nicotine involves a direct effect on sympathetic and parasympathetic ganglion cells. This usually occurs as a transient excitation, followed by depression, or even paralysis with effective doses In the central nervous system, as in ganglia, primary stimulation is succeeded by depression

The pharmacological response of the whole organism at any one time therefore,

representing as it does the algebraic sum of stimulant and depressant effects resulting from many direct, reflex, and chemical mediator influences on autonomic nervous transmission and excitability of virtually all organ systems, defies accurate description. The wide variation in smoking habits leads to every conceivable pattern of fluctuating blood levels of nicotine during the day. This suggests strongly that nicotine-sensitive cells may be shifting continuously from excitation to depression. Such activity probably accounts for the unpredictable effects observed in different individuals and in the same individual at different times.

Id. at 69 (Chapter 7)

The pharmacological effects of nicotine at dosage levels absorbed from smoking (1-2 mg per inhaled cigarette) are comparatively small; the response in any point in time represents the algebraic sum of stimulant and depressant actions from direct, reflex, and chemical mediator influences on the several organ systems. The predominant actions are central stimulation and/or tranquilization which vary with the individual, transient hyperpnea, peripheral vasoconstriction usually associated with a rise in systolic pressure, suppression of appetite, stimulation of peristalsis and, with larger doses, nausea of central origin which may be associated with vomiting.

Id. at 74-75 (Chapter 7)

In spite of the anecdotal nature of most of this information, the facts are that nicotine is present in tobacco in significant amounts, is absorbed readily from all routes of administration, and exerts detectable pharmacological effects on many organs and structures including the nervous system. The classical pharmacological characterization of nicotine--cellular stimulation followed by depression which is noted in isolated tissue and organ systems--has been invoked to explain the widely differing subjective responses of smokers, many of whom describe the effects as stimulating ("smoking relieves the depression of the spirits"), while others obtain a soothing and tranquilizing effect.

Wilder summarized the literature by noting "... observations that cigarette smoking obviously serves a dual purpose: it will mostly pick us up when we are tired or depressed and will relax and sedate us when we are tense and excited."

Id. at 349-350 (Chapter 13)

16. World Health Organization, Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death. (9th ed.), Geneva, World Health Organization, 1977.

17. ICD-9 provides the following definition of "drug dependence."

304 Drug dependence

A state, psychic and sometimes also physical, resulting from taking a drug, characterized by behavioral and other responses that always include a compulsion to take a drug on a continuous or periodic basis in order to experience its psychic effects, and sometimes to avoid the discomfort of its absence. Tolerance may or may not be present. A person may be dependent on more than one drug.

Excludes: nondependent abuse of drugs (305.--).

Id. at 198.

18. The categories of drug dependence listed in ICD-9 are: morphine type; barbiturate type; cocaine; cannabis; amphetamine type and other psychostimulants; hallucinogens; and various other combinations and unspecified dependencies. "Alcohol dependence syndrome" is given a separate major heading in ICD-9.
19. ICD-9 provides the following description of the category of "nondependent abuse of drugs."

305 Nondependent abuse of drugs

Includes cases where a person, for whom no other diagnosis is possible, has come under medical care because of the maladaptive effect of a drug on which he is not dependent (as defined in 304.--) and that he has taken on his own initiative to the detriment of his health or social functioning. When drug abuse is secondary to a psychiatric disorder, code the disorder.

Id. at 199.

20. Tobacco appears in ICD-9 with the following description:

305.1 Tobacco

Cases in which tobacco is used to the detriment of a person's health or social functioning or in which there is tobacco dependence. Dependence is included here rather than under 304.-- because tobacco differs from other drugs of dependence in its psychotoxic effects.

Tobacco dependence.

Id. at 199.

21. World Health Organization, International Statistical Classification of Diseases and Related Health Problems. (10th ed.), Geneva, World Health Organization, 1992.
22. The definition of "Dependence syndrome" given in ICD-10 is as follows:

Dependence syndrome

A cluster of behavioral, cognitive, and physiological phenomena that develop after repeated substance use and that typically include a strong desire to take the drug, difficulties in controlling its use, persisting in its use despite harmful consequences, a higher priority given to drug use than to other activities and obligations, increased tolerance, and sometimes a physical withdrawal state.

The dependence syndrome may be present for a specific psychoactive substance (e.g. tobacco, alcohol, or diazepam), for a class of substances (e.g. opioid drugs), or for a wider range of pharmacologically different psychoactive substances.

Id. at 321.

23. The 10 categories of mental and behavioral disorders due to use of psychoactive substances listed in ICD-10 (in the order they appear in the manual) are: alcohol; opioids; cannabinoids; sedatives or hypnotics; cocaine; other stimulants, including caffeine; hallucinogens; tobacco;

volatile solvents; multiple drug use and other psychoactive substances. Id. at 323-324.

24. American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders (2d ed.), Washington, D.C., American Psychiatric Association, 1968.
25. The description of "drug dependence" given in DSM-II is as follows:

304 Drug dependence

This category is for patients who are addicted to or dependent on drugs other than alcohol, tobacco, and ordinary caffeine-containing beverages. Dependence on medically prescribed drugs is also excluded so long as the drug is medically indicated and the intake is proportionate to the medical need. The diagnosis requires evidence of habitual use or a clear sense of need for the drug. Withdrawal symptoms are not the only evidence of dependence; while always present when opium derivatives are withdrawn, they may be entirely absent when cocaine or marihuana are withdrawn. The diagnosis may stand alone or be coupled with any other diagnosis.

Id. at 46.

26. American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders (3d ed.), Washington, D.C., American Psychiatric Association, 1980.
27. The criteria for "tobacco dependence" given in DSM-III are as follows:

Diagnostic criteria for Tobacco Dependence

- A. Continuous use of tobacco for at least one month.
- B. At least one of the following:
 - (1) serious attempts to stop or significantly reduce the amount of tobacco use on a permanent basis have been unsuccessful
 - (2) attempts to stop smoking have led to the development of Tobacco Withdrawal

(3) the individual continues to use tobacco despite a serious physical disorder (e.g., respiratory or cardiovascular disease) that he or she knows is exacerbated by tobacco use

Id. at 178.

28. The diagnostic criteria for "tobacco withdrawal" from DSM-III are as follows:

Diagnostic criteria for Tobacco Withdrawal

A. Use of tobacco for at least several weeks at a level equivalent to more than ten cigarettes per day, with each cigarette containing at least 0.5 mg of nicotine.

B. Abrupt cessation of or reduction in tobacco use, followed within 24 hours by at least four of the following:

- (1) craving for tobacco
- (2) irritability
- (3) anxiety
- (4) difficulty concentrating
- (5) restlessness
- (6) headache
- (7) drowsiness
- (8) gastrointestinal disturbances

Id. at 159-160.

29. McReynolds, W.T., "DSM-III and the Future of Applied Social Science," Professional Psychology 10(1): 123-132 (at 125), 1979.
30. Hughes, J.R., Gust, S.W. and Pechacek, T.F., "Prevalence of Tobacco Dependence and Withdrawal," American Journal of Psychiatry 142(2): 205-208 (at 205), 1987.
31. American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders (3d ed. - rev.), Washington, D.C., American Psychiatric Association, 1987.
32. DSM-III-R provides one set of criteria for "Psychoactive Substance Dependence." This single set of criteria is to be used for diagnosis of any of the categories of dependence, including nicotine dependence, but also alcohol dependence, cocaine dependence, cannabis dependence, etc. In DSM-III, separate sets of criteria had been given for each type of dependence. The nine DSM-III-R criteria (abbreviated here) of

which three are required for the dependence diagnosis are as follows:

Diagnostic criteria for Psychoactive Substance Dependence

A. At least three of the following:

- (1) substance often taken in larger amounts or over a longer period than the person intended
- (2) persistent desire or one or more unsuccessful efforts to cut down or control substance use
- (3) a great deal of time spent in activities necessary to get the substance (e.g., theft), taking the substance (e.g., chain smoking), or recovering from its effects
- (4) frequent intoxication or withdrawal symptoms when expected to fulfill major role obligations at work, school, or home . . . or when substance use is physically hazardous . . .
- (5) important social, occupational, or recreational activities given up or reduced because of substance use
- (6) continued substance use despite knowledge of having a persistent or recurrent social, psychological, or physical problem that is caused or exacerbated by the use of the substance . . .
- (7) marked tolerance . . .
- (8) characteristic withdrawal symptoms . . .
- (9) substance often taken to relieve or avoid withdrawal symptoms

B. Some symptoms of the disturbance have persisted for at least one month, or have occurred repeatedly over a longer period of time.

Id. at 167-168.

33. American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders (3d ed. - rev.), Washington, D.C., American Psychiatric Association, at 168, 1987.
34. American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders (3d ed. - rev.), Washington, D.C., American Psychiatric Association, at 150, 1987.
35. American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders (3d ed. - rev.), Washington, D.C., American Psychiatric Association, at 151, 1987.
36. Mattiace, P., "Surgeon General Says Video Games May Harm Children," The Associated Press, November 9, 1982, A.M. cycle.
37. "Computer Addicts Admit Aggression," Daily Telegraph, December 15, 1993.
38. Fürnham, A., "Hung Up On The Phone," New Scientist 111 (1524), pp. 60-61, September 4, 1986.
39. Rabinowitz, D., "Stop That Woman Before She Shops More," The New York Post, June 20, 1986.
40. Slater, K., "Confessions of a Nail Biter: How Therapy And an \$8 Manicure Ended Her Addiction," The Wall Street Journal, September 30, 1985.
41. Goleman, D., "Some Sexual Behavior Viewed as an Addiction," The New York Times, pp. C1 and C9, October 16, 1984.
42. Lokeman, R.C., "'Food Addicts' Help Others Fight Problem," The Kansas City Star, p. 53A, October 16, 1983.
43. Lindley, M.A., "TV Viewing is Fourth Legal Addiction," The News Herald (Panama City, FL), p. 8B, August 23, 1990.
44. "Send in the Clones," The Mail, p. 9, March 17, 1991.